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SN 09/707,445

CLAIM PTO

Having described the invention, the following is claimed:

1. A surgical instrument comprising a stem section extending from a handle, a cutting tool, said cutting tool including a rotatable cutter, a hollow articulated section connected with said cutting tool and said stem section, a rotatable drive shaft connected with said cutter and disposed in and extending axially through said stem section and said articulated section, said drive shaft having a flexible portion disposed in said articulated section, and actuator means connected with said handle for bending said articulated section and said flexible portion of said drive shaft to change the orientation of said cutter relative to tissue from a first orientation to a second orientation, said actuator means including first and second elongated elements which extend through said stem section and articulated section and are connected with said cutting tool, said elongated elements being disposed between an outer side surface of said flexible portion of said drive shaft and an inner side of said articulated section, said actuator means including means for pulling on one of said elongated elements to bend said articulated section and said flexible portion of said drive shaft to change the orientation of said cutter from the first orientation to the second orientation, said drive shaft being rotatable relative to said articulated section to rotate said cutter when said cutter is in the first orientation and when said cutter is in the second orientation;

said surgical instrument further including passage means extending axially through said drive shaft for conducting tissue from a location adjacent to said cutter through said articulated section and said stem section toward the handle.

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2. A surgical instrument comprising a stem section extending from a handle, a cutting tool, said cutting tool including a rotatable cutter, a hollow articulated section connected with said cutting tool and said stem section, a rotatable drive shaft connected with said cutter and disposed in and extending axially through said stem section and said articulated section, said drive shaft having a flexible portion disposed in said articulated section, and actuator means connected with said handle for bending said articulated section and said flexible portion of said drive shaft to change the orientation of said cutter relative to tissue from a first orientation to a second orientation, said actuator means including first and second elongated elements which extend through said stem section and articulated section and are connected with said cutting tool, said elongated elements

being disposed between an outer side surface of said flexible portion of said drive shaft and an inner side of said articulated section, said actuator means including means for pulling on one of said elongated elements to bend said articulated section and said flexible portion of said drive shaft to change the orientation of said cutter from the first orientation to the second orientation, said drive shaft being rotatable relative to said articulated section to rotate said cutter when said cutter is in the first orientation and when said cutter is in the second orientation;

said surgical instrument further including passage means extending through said drive shaft for conducting irrigating fluid through said drive shaft from said handle to said cutter.

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3. (Twice amended) A surgical instrument comprising a hollow rigid stem section extending from a handle, a cutting tool, said cutting tool including a rotatable cutter, a hollow articulated section connected with said cutting tool and said stem section, a rotatable drive shaft connected with said cutter and disposed in and extending axially through said stem section and said articulated section, said drive shaft including a rigid section disposed in said stem section and a flexible section disposed in said articulated section, and actuator means connected with said handle for bending said articulated section and said flexible section of said drive shaft to change the orientation of said cutter relative to tissue from a first orientation to a second orientation, said drive shaft being rotatable relative to said articulated section when said cutter is in the first orientation and when said cutter is in the second orientation, said actuator means extending through substantially the entire length of said articulated section, said cutting tool being prevented from moving in an axial direction relative to said articulated section.

said surgical instrument further including passage means extending axially through said drive shaft for conducting tissue from a location adjacent to said cutter through said articulated section and said stem section toward the handle.

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4. A surgical instrument comprising a hollow rigid stem section extending from a handle, a cutting tool, said cutting tool including a rotatable cutter a hollow articulated section connected with said cutting tool and said stem section, a rotatable drive shaft connected with said cutter and disposed in and extending axially through said stem section and said articulated section, said drive shaft including a rigid section disposed in said stem section and a flexible section disposed in said articulated section, and actuator means connected with said handle for bending said articulated section and said flexible section of said drive shaft to change the orientation of said cutter relative to tissue from a first orientation to a second orientation, said drive shaft being rotatable relative to said articulated section when said cutter is in the first orientation and when said cutter is in the second orientation;

wherein said actuator means includes first and second elongated elements which extend through said stem section and articulated section and are connected with said cutting tool, said elongated elements being disposed between an outer side surface of said flexible section of said drive shaft and an inner side of said articulated section, said actuator means including means for pulling on said first elongated element to bend said articulated section and the flexible section of the drive shaft in a first direction, said actuator means including means for pulling on said second elongated element to bend said articulated section and said flexible section of said drive shaft in a second direction opposite to said first direction.

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5. (Twice amended) A surgical instrument comprising a hollow rigid stem section extending from a handle, a cutting tool, said cutting tool including a rotatable cutter, a hollow articulated section connected with said cutting tool and said stem

section, a rotatable drive shaft connected with said cutter and disposed in and extending axially through said stem section and said articulated section, said drive shaft including a rigid section disposed in said stem section and a flexible section disposed in said articulated section, and actuator means connected with said handle for bending said articulated section and said flexible section of said drive shaft to change the orientation of said cutter relative to tissue from a first orientation to a second orientation, said drive shaft being rotatable relative to said articulated section when said cutter is in the first orientation and when said cutter is in the second orientation, said actuator means extending through substantially the entire length of said articulated section, said cutting tool being prevented from moving in an axial direction relative to said articulated section;

said surgical instrument further including passage means extending axially through said drive shaft for conducting irrigating fluid from said handle to said cutter.

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6. (Twice amended) A surgical instrument comprising a stem section extending from a handle, a movable member, a hollow articulated section connected with said movable member and said stem section, a drive shaft connected with said movable member and disposed in and extending axially through said stem section and said articulated section, said drive shaft having a flexible portion disposed in said articulated section and actuator means connected with said handle for bending said articulated section and said flexible portion of said drive shaft to change the orientation of said movable member relative to tissue from a first orientation to a

second orientation, said actuator means including first and second elongated elements which extend through said stem section and substantially the entire length of said articulated section and are connected directly with said movable member, said actuator means including means for pulling on one of said elongated elements to bend said articulated section and said flexible portion of said drive shaft to change the orientation of said movable member from the first orientation to the second orientation, said drive shaft being movable relative to said articulated section to move said movable member when said movable member is in the first orientation and when said movable member is in the second orientation;

said surgical instrument further including passage means extending axially through said drive shaft for conducting tissue from a location adjacent to said movable member through said articulated section and said stem section toward the handle.

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7. (Twice amended) A surgical instrument comprising a stem section extending from a handle, a movable member, a hollow articulated section connected with said movable member and said stem section, a drive shaft connected with said movable member and disposed in and extending axially through said stem section and said articulated section, said drive shaft having a flexible portion disposed in said articulated section, and actuator means connected with said handle for bending said articulated section and said flexible portion of said drive shaft to change the orientation of said movable member relative to tissue from a first orientation to a second orientation, said actuator means including first and second elongated

elements which extend through said stem section and substantially the entire length of said articulated section and are connected directly with said movable member, said actuator means including means for pulling on one of said elongated elements to bend said articulated section and said flexible portion of said drive shaft to change the orientation of said movable member from the first orientation to the second orientation, said drive shaft being movable relative to said articulated section to move said movable member when said movable member is in the first orientation and when said movable member is in the second orientation;

said surgical instrument further including passage means extending through said drive shaft for conducting irrigating fluid through said drive shaft from said handle to said movable member.

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10. A surgical instrument comprising:
- a handle;
  - a stem section extending from said handle;
  - means for acting on tissue including a movable member;
  - a hollow articulated section connected to said movable member and  
said stem section;
  - means connected to a portion of said movable member for moving said  
portion relative to said articulated section, said means being disposed in and  
extending axially through said stem section and said articulated section, said means  
having a flexible portion disposed in said articulated section; and

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actuator means connected to said handle for bending said articulated section and said flexible portion of said means for moving said portion of said movable member to change the orientation of said movable member relative to tissue from a first orientation to a second orientation, said actuator means including at least one elongated element which extends through said stem section and substantially the entire length of said articulated section and is connected directly to said movable member;

said means for moving said portion of said movable member being movable relative to said articulated section when said movable member is in the first orientation and when said movable member is in the second orientation;

said surgical instrument further including passage means for conducting tissue from a location adjacent to said movable member to said handle, said passage means extending axially from said movable member through said articulated section and said stem section to said handle, said passage means extending through said means for moving said portion of said movable member.

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11. A surgical instrument comprising:
- a handle;
  - a stem section extending from said handle;
  - means for acting on tissue including a movable member;
  - a hollow articulated section connected to said movable member and  
said stem section;
- means connected to a portion of said movable member for moving said  
portion relative to said articulated section, said means being disposed in and  
extending axially through said stem section and said articulated section, said means  
having a flexible portion disposed in said articulated section; and
- actuator means connected to said handle for bending said articulated  
section and said flexible portion of said means for moving said portion of said  
movable member to change the orientation of said movable member relative to  
tissue from a first orientation to a second orientation, said actuator means including  
at least one elongated element which extends through said stem section and  
substantially the entire length of said articulated section and is connected directly to  
said movable member;
- said means for moving said portion of said movable member being  
movable relative to said articulated section to move said movable member relative to  
said articulated section when said movable member is in the first orientation and  
when said movable member is in the second orientation;

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said surgical instrument further including passage means for  
conducting irrigating fluid from said handle to said movable member, said passage  
means extending axially from said handle through said articulated section and said  
stem section to said movable member, said passage means extending through said  
means for moving said portion of said movable member.